Expensing stock options: the way ahead

It was all the fashion during the naughty 90s, but now the issuing of stock options is no longer a preferred form of executive remuneration. As WAYNE LONERGAN points out, stock options can still cause problems.

Stock options have been widely used as a method to attract and retain employees, and in particular senior executives, especially in emerging hi-tech firms and junior exploration companies.

Recent corporate scandals in the US and here in Australia, however, indicate that there have been abuses in using employee stock options (ESOs). They have been used by many of the more established companies, which are more than capable of paying full cash compensation to senior executives.

There are a number of reasons why companies issue ESOs. In some cases these reasons include concealing how much their executives were actually rewarded. As one commentator put it, “options for top executives have been thoroughly tainted by the notion that in practice they were often not a reward for good company management, but simply a licence to print money”.

This notion has manifested itself in recent high-profile US corporate collapses, where top executives of those companies had reaped huge rewards through stock options before the companies went bankrupt.

In response to investors’ concerns about financial disclosure, a number of recent high-profile US corporations, including General Electric, Coca-Cola, BancOne, Amazon.com, Washington Post, Freddie Mac and Ford, have recently announced that they would treat ESOs as an expense.

However, for most of these companies, the recognition of ESOs will have little impact on reported earnings per share. For example, treating ESOs as an expense would only cost GE and Coca-Cola around 1 cent per share in EPS.

In contrast, the real impact of expensing ESOs would be most felt by hi-tech companies like Intel, Cisco Systems, Dell Computer Corp and Microsoft, which understandably resisted the recognition of ESOs as an expense.

A recent study by Merrill Lynch showed that Intel’s 2001 earnings would have fallen by 80% if ESOs had been expensed. This is much higher than the average reduction of (a still staggering) 21% for companies in the S&P 500.

The impact of expensing ESOs would also vary across firms in Australia, with ‘new economy’ stocks hit harder. For example, it is estimated that the fair value of ESOs represented about 29% of Sonic Healthcare’s net profit, 11% of Patrick Corp’s net profit and 6-7% of BRL Hardy’s net profit. Cochlear, ResMed, CSL, News Corp and AMP could have seen their reported earnings...
fall by 56%, 29%, 21%, 14.8% and 3.7% respectively if ESOs were expensed.

**Are ESOs pay for performance?**

A typical ESO is a plain vanilla call option with the exercise price set equal to the stock price on the issue date. A problem with traditional ESOs is that they are too generous to executives, particularly in bullish market conditions.

In response to claims that traditional executive option plans are giving away millions of dollars and do not provide the right incentives to executives, a growing number of companies have introduced performance hurdles that need to be met before executives can exercise their ESOs.

Typical performance hurdles are a share price performance target (say 30% above the exercise price in three years), target growth in earnings per share (say 8% p.a. compound) and share price performance relative to a specified market index or total shareholder return relative to a comparator group.

**Why should ESOs be expensed?**

Expensing ESOs is not a new issue. In 1993 the Federal Accounting Standards Board (FASB) in the US proposed that ESOs be expensed. This proposal soon became the subject of intense debate and lobbying until mid-1994 when the FASB was forced to drop the contentious proposal.

However, recent corporate collapses in the US have intensified the pressure to adopt a tougher stance on the treatment of ESOs. Although the expensing of ESOs could strip companies of millions or even billions of dollars in reported earnings, the expensing of ESO grants is currently receiving widespread support from lawmakers, accounting standard setters, the investor community and academic circles.

A Bill introduced by US senators requires firms to expense stock options against reported earnings. Support for the expensing of ESOs can also be found in fundamental accounting principles. The substance of an issue of stock options to an employee is the same as if the employee is paid in cash, and, they then used the cash to subscribe for an option. If accounting for the transaction actually followed its substantive form, it would have to be recognised at fair value.

The most commonly articulated accounting rationale for expensing ESOs is that the reporting entity is gaining an economic benefit in the form of employee services. If this was not so, the rationale for issuing ESOs would largely disappear. It therefore follows that the consumption of this economic benefit should be recognised as an expense.

Those who oppose the expensing of ESOs claim that their issue does not cost the company anything. This is not correct. ESOs are options over the company’s unissued capital. In other words, at a reporting entity level the option is over the reporting entity’s unissued capital and not over its owners’ shares.

Prominent academics in both the accounting and finance professions have also articulated theoretical arguments for expensing ESOs. For example, in an article published in a recent issue of the *Wall Street Journal*, three of the top professors in the US, Bodie, Kaplan and Merton (with Professor Merton being the 1997 winner of the Nobel prize for his work in option pricing), provided strong support for expensing ESOs.

They argue using what, in substance, is an opportunity cost approach. That is, when a company grants options to its employees, the company has given up something that has considerable value.

This value represents an opportunity cost to the company because the company forgoes an equivalent amount of cash by issuing options direct to employees, instead of selling the options to external investors for cash.

This view is also strongly supported by the well-known investor, Warren Buffett, who commented: “When a company gives something of value to its employees in return for their services, it is clearly a compensation expense. And if expenses don’t belong in the earnings statement, where in the world do they belong?”

**The ‘no’ case**

Probably the most popular argument against the recognition of ESOs in the income statement is that grants of stock options do not involve cash outlays and therefore no expense need be recorded. This cash-based reasoning violates the fundamental accrual basis of accounting. Simply put, expenses do not necessarily value cash outflows in the same period.

The second argument for the non-expensing of ESOs is that the expensing of ESOs would be double-counting because the dilution effect of granting options is recognised by an increase in the number of shares in the denominator of a fully diluted earnings per share calculation.

This argument is also invalid because if it held, then firms, by analogy, would
issue shares instead of salaries to employees, ignore the value of the shares issued and just record the increase in the number of shares.

By extension, this invalid argument would even allow firms to issue stock options to suppliers in return for services and materials, and just ignore their costs on the income statement, because the effect would be recognised in a higher number of shares in the diluted EPS calculation. By analogy and extension, the double-counting based reasoning is clearly flawed.

The third argument cited by opponents of expensing ESOs is that the cost of the ESOs to the company differs from the value of the options to the employees who receive them. While there is some merit in this proposition, it fundamentally ignores the reporting entity concept.

**IASB is unequivocal**

The compelling case for the expensing of ESOs has also reached consensus in the International Accounting Standards Board (IASB), which has already voted unanimously to require the costs of ESOs to be expensed, with only the valuation model to be finalised. The US standard setter, FASB, has also agreed to consider the pending IASB proposal.

At present, accounting standards in Australia do not require ESOs to be recognised as costs. They are required to be disclosed in corporate financial statements, but the disclosure requirements are less strict than those in the US.

This is because, while in the US disclosure must be accompanied by some estimated value of the worth of the share options, in Australia that estimate is not required under the current guidelines.

The move towards expensing ESOs in Australia has been well supported by regulators, investors and standard setters. The Australian Accounting Standard Board (AASB) confirmed that the proposed IASB standard on expensing ESOs would apply in Australia ‘word for word’ by 2005. In the light of the consensus among regulators on the necessity for the expensing of ESOs, basically at issue is not whether ESOs should be expensed, but only how.

**When should ESOs be expensed?**

The cost of an ESO to the company should be measured at the time it is issued. There are a number of reasons why this is so. Firstly, the issue date is when an economic resource (i.e. the ability to issue options) is used. Secondly, to recognise the option expense when the option is exercised (a concept that continues to be pushed by some proponents) fails to recognise the significant time and volatility value of the options which is given to the employee at the date of issue.

It also results in retrospectively including in the option expense the impact of intervening stock market movements, which has the effect of overstating the option expense if share price increases significantly and understating the expense if share prices fall or increase only modestly.

Empirical evidence in support of recognising ESOs on the grant date, rather than the vesting date, is provided in a recent study by Professor Phillip Brown and Elissa Yew, which shows that ESOs are unequivocally value-relevant in Australia at the grant date, in the sense that share prices are significantly correlated with the value of ESOs measured on the grant date. In contrast, such correlation between share prices and the value of ESOs measured on the vesting date is not significant.

At a practical level, the best way of measuring the true cost of an ESO is on an opportunity cost basis. That is, what value would an arm’s length investor pay for the option? It is important to note, however, that the most likely outcome of the accounting standard setters’ approach to ESOs is that they will spread the value of the ESO over the vesting period. This is because the basis of accounting recognition is basically driven by the recognition of the services provided by employees. It is not a reflection of the timing of the true value transfer that actually occurs.

**A reality check**

In addition, where an executive is dismissed by the company, the payout arrangements are frequently such that compensation and often substantial compensation is paid for the loss of option benefits.

**How should ESOs be expensed?**

The expensing of ESOs requires the fair value of the options to be estimated. Based on earlier discussions, it is the value of the options to the company that is relevant to the recognition of ESOs on the income statement.

The measurement of the fair value of ESOs has important implications for reported earnings of some Australian companies. The question is how the fair value of ESOs should be determined.

**Valuation principles**

A theoretically sound approach to estimating the fair value or the cost of ESOs to the company is based on an opportunity cost concept. That is, what is the amount of cash that the company would have raised had the options been issued to outside investors, instead of the company’s employees or executives?

However, an appropriate measurement of such opportunity cost should be based on the assumption that the options that would have been issued to outside investors would have identical features to the ESOs; otherwise this is not a comparison of like with like.

Ignoring the idiosyncratic features of an ESO in estimating its value implies that the cost of the ESO to the company is simply the value of an ordinary American call option, which is widely recognised as overstating the true cost of the ESO to the company.

Therefore, even on an opportunity cost basis, the options that would otherwise be issued to outside investors should be treated, for valuation purposes, as if they had the peculiar features of ESOs. Although such a treatment is technically necessary, it actually blurs the distinction between the cost of an ESO to the company and its value to the employee.

This is because on an opportunity cost basis, the cost of options to the company boils down to the amount that an arm’s length investor would pay for the option. However, such investors would not necessarily make the same exercise decisions as if he or
she was an employee or executive of the company.

**A simple ESO valuing approach**

There are a number of generally accepted valuation methodologies available with which to value options over shares in a company. The two most commonly used models are the Black-Scholes option valuation model (BS Model) and the Binomial option pricing model (Binomial Model).

These models value an option using a statistical analysis of the behaviour of the value of the asset (shares) over which the option is held, at various points in time. The value of an option is then calculated as an output of the following fundamental determinants of option value:

(a) the current market value of the underlying asset (share);
(b) the exercise price of the option;
(c) the time to expiry of the option;
(d) the prevailing level of the risk-free interest rate;
(e) the expected volatility of the value of the underlying asset (share) over the period until the expiry of the option;
(f) the level of dividends expected to be paid on the asset (share) in the period until the expiry of the option and their timing.

The BS Model can be used to value European options (i.e. options only exercisable on the expiry date) and American call options (being exercisable at any time prior to expiry) over stocks which pay no dividend over the period until the expiry of the options.

It is not designed to value American options on dividend-paying stocks or to take into account dividends expected to be received on the underlying shares prior to the expiry date.

In contrast, the Binomial Model can be used to value American options and/or options on dividend-paying stocks.

While some inputs to the models (underlying share price, time to expiry and dividends) are quite straightforward to estimate, others (e.g. expected volatility) pose several estimation issues.

**The risk-free interest rate**

The risk-free rate used to value an option is generally defined to be the interest rate on government bonds of a maturity equivalent to the term of the option. This rate is used to take into account the fact that a call option holder will not have to pay the exercise price until the call option is exercised, and the fact that the present value of the exercise price is therefore less than the exercise price due to the time value of money.

Instead, the call option holder can invest the cash which they would otherwise need to exercise the option ‘risk free’ until expiry or exercise of the option.

**It should be noted that volatility measured on a historical basis will not necessarily reflect actual future volatility...**

The expected volatility of the underlying share price

Option valuation models require estimation of the expected volatility of the underlying share price over the period prior to the expiry of the options. The volatility is measured as the standard deviation of the underlying share’s returns. The more volatile the underlying share’s returns (i.e. the more the share’s returns fluctuate), the higher the value of the option. This is because the more volatile the underlying share’s returns, the greater the probability there is of the option being in the money or having positive value on expiry.

Historical volatility is generally used in valuing ESOs. It should be noted that volatility measured on a historical basis will not necessarily reflect actual future volatility and different investors may have different expectations about future volatility.

Furthermore, future developments within a corporate group may be so significant that they may cause a future change in volatility. However, if the future change in volatility is not predictable or imputable at the grant date, which is likely to be the case, then historical volatility provides an unbiased estimate of the expected future volatility.

**Adjusting for idiosyncratic features of ESOs**

The idiosyncratic features of ESOs require that the base value of the options to be adjusted for (i) vesting conditions (ii) early forfeiture and (iii) non-transferability.

**Vesting conditions and early forfeiture**

Vesting conditions and the possibility of early forfeiture are inextricably linked in valuing ESOs because early forfeiture has asymmetrical impacts on the value of vested and non-vested options. An allowance should be made for the expected reduction in value of the options caused by the possibility of early forfeiture by applying a vicissitudes discount. At a practical level a vicissitudes discount really has two separate elements: life expectancy and health; and job expectancy.

For vested options the vicissitude discounts should only be applied to the time value of the options. No vicissitudes discount is applied to the intrinsic value of vested options because, even in the event of termination or cessation, the intrinsic value of vested options can be accessed by the employee (or their estate).

For non-vested options, the vicissitudes discount should be applied to both the intrinsic and time value of the option. This is because non-vested options cannot be exercised even at termination subject to employees’ legal rights in the event of termination.

**Non-transferability**

Since an ESO is normally not transferable, it has no marketability or liquidity. Marketability is valuable to investors because the lack of marketability causes investors to miss opportunities to allocate capital to assets with higher returns. Consequently, an illiquid or non-tradable asset should be valued by an investor at a discount to a liquid, but otherwise identical asset.
The IASB (and the FASB in its 1993 proposal) propose to allow for the non-transferability of ESOs by using the expected life, instead of the contracted life, of the options.

On the other hand, many argue that it is inappropriate to apply a discount for lack of negotiability/marketability. This is because the objective of an option plan is to enable employees to participate in the future upside potential and volatility of the underlying share which at any one time is reflected in both the intrinsic and time value of the option.

To ‘deny’ the employee the benefit of the volatility and time value by applying a discount for lack of marketability is therefore inconsistent with the objective said to be underlying such schemes.

In cases where an illiquidity discount is required, a range between 20% and 25% would not be unreasonable. This is consistent with an empirical study on the value discount applicable to non-traded currency options and comparable to the discount ascribed to the valuation of non-tradable shares in Australia.

The inability to sell the options at their discretion also exposes investors to more risk and might, therefore, induce them to hedge their position via, say, back-to-back or synthetic options or short-selling the underlying shares.

These hedging transactions would give rise to incremental costs to holders of non-tradable options. The question is whether the transaction costs are relevant to determining the value of the ESOs. The answer from the issuer’s perspective is no.

This is because transaction costs are already reflected in the non-transferability discount. Investors place lower values on non-tradable options relative to tradable options largely because they might have to incur additional transaction costs as a consequence of their inability to sell the options at their discretion.

Applying both non-transferability discount and transaction costs is actually double-counting. While transaction costs are relevant to the value of the ESOs to an employee, they do not represent an incremental opportunity cost to the issuing company.

**Future developments in the valuation of ESOs**

The type of ESOs discussed in previous sections is traditional (plain vanilla) employee stock options. In response to claims that traditional ESOs are too generous and do not provide the right incentives to executives, firms have begun introducing non-traditional ESOs.

A recent study in the US shows that there are at least six different types of non-traditional ESOs, viz premium options, performance-vested options, replicable options, purchased options, reload options and indexed options.

**Briefly:**
- A premium option is an out-of-the-money option on the grant date;
- With performance-vested options, market-based performance conditions must be satisfied before the options vest;
- With replicable options, the exercise price could be reset to a lower level if the firm’s stock price falls;
- With a purchased option, the executive pays a specified fraction of its exercise price on the grant date. The remainder is paid when the executive exercises the options. If the executive fails to exercise, he or she will lose the prepaid fraction;
- Reload options entitle the executive to exercise the options by paying the exercise price in shares he or she owns rather than in cash and then receive new options to replace the exercised ones;
- With indexed options, the exercise price is set to move in line with a pre-specified benchmark, such as an industry or market-wide stock index.

This study also shows that traditional ESOs and non-traditional ESOs differ in terms of both value and incentive effects. The combination of the idiosyncratic features of traditional ESOs and the non-traditional features of ESOs makes it even more challenging to estimate the cost of ESOs to companies granting non-traditional ESOs.

A recent study in the US has introduced the concept of economic dilution, which is based on both the intrinsic value and time value of ESOs. This is in contrast with the concept of accounting dilution, which focuses on intrinsic value.

In essence, the accounting dilution only reflects the extent to which a firm’s earnings accrue to the holders of outstanding ESOs if the options are exercised immediately. On the other hand, economic dilution encapsulates both the current and future extent to which a firm’s earnings accrue to holders of outstanding ESOs.

Consequently, in the case of at-the-money options, while the accounting dilution is zero, economic dilution is always positive because there is always a likelihood that the underlying share price will rise in the future, giving rise to the exercise of the options and hence the dilution of the earnings stream.

The US study captures economic dilution of ESOs by replacing intrinsic value in the above formula with the total value of ESOs (i.e. intrinsic value plus volatility value).

US empirical evidence suggests that share prices incorporate not only accounting dilution, but also economic dilution of ESOs. That is, share prices are reflective of the intrinsic value of ESOs and some portion of their volatility value.

This is particularly true in cases where the value of ESOs is significant relative to the market capitalisation of the outstanding shares. The upward bias can be mitigated in two ways. One is to apply a lower PE multiple to the accounting-diluted EPS. The other is to measure the economic-diluted EPS and use the PE multiple obtained from comparable firms (ideally with no outstanding ESOs).

**Expensing ESOs and implications for corporate financial policies**

The immediate impact of expensing of ESOs is to lower reported EPS. Although corporate finance theory suggests that the value of a firm is determined by its expected future cash flows, not its EPS, many studies show that EPS can have a significant impact on share prices. Insofar as investors do care about EPS, companies might take actions to mitigate the negative impacts of expensing ESOs on EPS.

Even before ESOs are required to be expensed for accounting purposes, grants of ESOs already reduce diluted EPS. This is because more ESOs granted
translate into a higher number of shares in the denominator of diluted EPS calculation and hence lower diluted EPS.

Studies in Australia and the US show that many firms engage in share repurchase programs to neutralise the dilution effect of ESOs. A study by Asjeet Lamba and Vivek Miranda from the University of Melbourne shows that there is a positive association between the amount and value of executive options outstanding and the size of the share repurchases in Australia.

They also suggest that ESOs provide managers with an incentive not to pay dividends because the payment of dividends actually reduces the value of the ESOs outstanding. To the extent that expensing ESOs has a more direct impact on reported EPS, share repurchases would be expected to be an even more popular mechanism to offset the decline in EPS.

Another mechanism to avoid the negative impact of expensing ESOs on reported EPS is to cancel or suspend the option plans altogether. Australian high-profile companies which have announced the suspension of option schemes include the Commonwealth Bank, Qantas, Smorgon Steel and WMC.

Under the current tax law in Australia, executives can choose one of two options of when to pay tax—either at the time of issue or at the time of exercise. From the company’s perspective, no deductions could generally be claimed when an executive exercises the options.

In contrast, tax laws in the US allow companies to claim tax deductions when employees exercise their options. The upshot is that in the US ESOs appeared to become an effective tax shield. A recent study in the US shows that firms that have such options-related tax benefits use less debt and pay lower dividends per share.

Some conclusions
Expensing employee options will continue to be controversial, but is inevitable from an accounting standard perspective.

Many employee option schemes have been overly generous and have hidden significant corporate costs.

The likely accounting standard setters requirements will still understate the true value of employee options, at least in their early years.

Determining the fair value of ESOs is much more complex than the (likely) accounting rules suggest.

The value of ESOs to an executive or employee is not the same as the cost to the issuer.

The impact on Australian companies will be much less serious, for most companies, than in the US.

In part this is because in the US there are income tax deductions for the value of ESOs.

Interestingly, the asymmetric tax treatment of ESOs in Australia (taxable to recipients, non-deductible to issuers) has not discouraged their widespread use. It would be a good thing if options were to become tax deductible to Australian issuers.

It would be a pity if inadequate accounting rules unduly constrained their deductibility.